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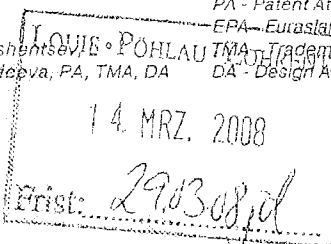
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VIA DHL

Date: 12 March 2008

Your Ref:

P/45106RUW/NZ/hs

Our Ref:

2412-135440RU/1202

Country:

RUSSIA

Appl No:

2006105654

Pat No:

In the name of: 24.04.08
OVD KINEGRAM AG

Dear Sirs,

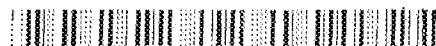
We are pleased to enclose the Decision on Grant of the Patent of the RF (hereinafter referred to as the Decision) issued on January 24, 2008 with respect to the group of inventions characterized in the amended set of claims.

With issuance of the Decision any further amendments of the set of allowed claims become impossible in proceedings on the present application, but may be affected in a divisional application filed before a patent granted for this application is registered in the State Patent Register. Such registration normally takes place about two month after issuance fees are paid, however, the Applicant is strongly recommended to inform us before payment of the issuance fees about the intension to file a divisional application, since no extensions or postponing of the registration date are possible.

While translating and reviewing the claims enclosed with the Decision several misprints occurred at the RF Patent Office side have been found by us. The official letter has been sent to the RF Patent Office where we have demanded to correct these misprints. We enclose herewith the correct English-language version of the Decision, the Russian-language Decision containing said misprints and a copy of the official letter to the RF Patent Office. Upon receipt of the correction confirmation from the RF Patent Office we will notify you without delay.

The Examiner has cited several documents in the Decision (index (56)). Moreover, please be informed that indicated Russian document RU 2193975 corresponds to published German-language document WO9904983, indicated Russian document RU 2074097 corresponds to published English-language document AU 90/00167. At this, the document of RU 2176092 has no

Client's code - DE06720



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corresponding publication in English or German, but we may order and translate it, if you need.
Please, let us know whether you want us to order copies of any one of these documents.
Please, let us know if you need any further commentary or advice regarding prosecution of the present application.

Please be informed that in accordance with article 1393 (2), chapter 4 of the Civil Code the payment of Grant and Renewal fees should be effected within two months from above date, that is not later than **29 March 2008**.

The Grant fee amounts to 400 US\$, our fee is 200 US\$. The Renewal fees payable from the third year of patent duration should be paid for the period from 16 July 2006 till 16 July 2009 in the amount of 350 US\$, our fee is 190 US\$.

Please bear in mind that if the fees are not paid before the above date the payment in question is possible within six months from said date but with a fine of 50%.

We look forward to your consent to payment of the fees by **28 March 2008**.

Yours sincerely,

Yury Kuznetsov
Partner
Patent Attorney



Encl.: ☒ Decision of Grant
 ☒ Invoice

☒ Translation

Your reference: P/45106RUW/NZ/hs
Our reference: 2412-135440RU/8202
Application No.: 2006105654
Attorney Name: Yury D.Kuznetsov

TRANSLATION

DECISION ON GRANT
PATENT FOR INVENTION

(21) Application № 2006105654/09(006112). (22) Date of filing the application 16 July 2004
(24) Date from which industrial property rights may have effect 16 July 2004
(85) Date of commencement of the national phase 26 February 2006

PRIORITY IS FIXED ON DATE

- ☐ (22) Date of filing the application
☐ (23) Date of filing of additional materials of to the earlier application №
☐ (62) ☐ priority date of the application № of from which the present application has been divided up
☐ filing date of the application № of from which the present application has been divided up
☐ (66) Filing date of the earlier application №
☒ (30) Data relating to priority under the Paris Convention

| (31) Number assigned to priority application | (32) Date of filing priority application | (33) Country code | Claim |
|---|---|----------------------|-------|
| 103 33 704.0 | 23 July 2003 | DE | |

(86) PCT Application number and date EP2004/007970 of 16 July 2004.

(87) PCT Publication number and date WO2005/010809 of 03 February 2005.

(72) Inventor(s) LUTZ, Norbert, DE
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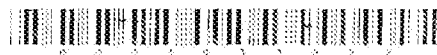
(73) Assignee(s) OVD KINEGRAM AG, CH

(54) Title SECURITY ELEMENT FOR RADIO FREQUENCY IDENTIFICATION

The Department of Electrical and Radio Engineering basing on the results of substantive examination of the patent application conducted in respect to

☐ originally filed claims ☒ claims amended by the applicant

has revealed the compliance of the claimed group of inventions with the requirements of patentability, set forth by Article 1349 and 1350 of the Civil Code of the Russian Federation and decided to grant the Patent of the Russian Federation for the following claims:



(21) 2006105654/09

(51) IPC

G06K 19/067 (2006.01)

(57)

1. A security element (1, 2, 7, 8) for RF identification, wherein the security element has a flexible, electrically non-conducting substrate layer (11, 24) and a first electrically conductive layer (29) of an electrically conducting material which is applied to the substrate layer and which in a first surface region (4, 51, 53, 63, 64, 65) is shaped out in pattern form to form an RF component (12, 72, 81), wherein a first relief structure (27, 28, 60) with grooves for altering electrical properties of the RF component is shaped at least in region-wise manner in the surface region, associated with the RF component, in the first electrically conductive layer (29),

characterised in that

the first electrically conductive layer (29) is shaped out in the first surface region (4, 51, 53, 63, 64, 65) in the form of an RF antenna (12) or a coil, that in the region of the conductive layer (29) which is associated with the RF antenna (12) or the coil the grooves of the first relief structure (27, 28, 60) are oriented on average more longitudinally relative to the direction of flow of the electric current, and that the first relief structure (27, 28, 60) has a profile depth in the range of 50 nm to 10 μ m and a spatial frequency in the range of 100 to 2000 lines per mm, wherein the grooves of the first relief structure (27, 28, 60) are provided in the surface of the first electrically conducting layer (29), which faces the substrate layer (11, 24), and also in the surface of the first electrically conducting layer (29), which faces away from the substrate layer (11, 24).

2. A security element according to claim 1 characterised in that the substrate (24) is a replication layer and the first relief structure (27) is shaped in the surface of the replication layer (24) which is towards the first electrically conductive layer.

3. A security element according to claim 1 characterised in that the first electrically conductive layer (29) is a metal layer applied to the substrate layer (24).

4. A security element according to claim 1 characterised in that the first electrically conductive layer (29) is of a thickness in the range of 50 nm to 50 μ m, preferably 1 to 10 μ m.

5. A security element according to claim 1 characterised in that the grooves of the relief

structure (27) in the region of the electrically conductive layer which is associated with the RF antenna or coil are oriented longitudinally with respect to the direction of flow of the electric current.

6. A security element according to one of claims 1 to 5 characterised in that the first electrically conductive layer (29) in the first surface region (2) is shaped out in the form of one or more conductor tracks of a width of 50 μm to 10 mm, preferably 100 μm .

7. A security element according to one of claims 1-5 characterised in that the security element has a second electrically conductive layer (76) and that the first and the second electrically conductive layers (73, 76) form a capacitive element (70) in the first surface region.

8. A security element according to claim 6 characterised in that the security element has a second electrically conductive layer (76) and that the first and the second electrically conductive layers (73, 76) form a capacitive element (70) in the first surface region.

9. A security element according to claim 7 characterised in that a second relief structure (7) is shaped at least in region-wise manner in the surface region associated with the capacitive element (70) in the second conductive layer (76).

10. A security element according to claim 8 characterised in that a second relief structure (7) is shaped at least in region-wise manner in the surface region associated with the capacitive element (70) in the second conductive layer (76).

11. A security element according to claim 7 characterised in that the first relief structure (78) has a plurality of mutually crossing grooves.

12. A security element according to claim 8 characterised in that the first relief structure (78) has a plurality of mutually crossing grooves.

13. A security element according to one of claims 1-5 characterised in that the first relief structure (27) is of a sawtooth, triangular, rectangular or sine profile.

14. A security element according to one of claims 1-5 characterised in that the first relief structure (60) is formed from the superimposition of a coarse structure and a fine structure.

15. A security element according to one of claims 1-5 characterised in that the first relief structure additionally produces an optical security feature.

16. A security element according to one of claims 1-5 characterised in that the security element has a resonance circuit for RF identification.

17. A security element according to one of claims 1-5 characterised in that the security element has a chip.

18. A security element according to one of claims 1-5 characterised in that the security element is a film element, in particular a stamping film, a laminating film, a sticker film or a partial element of

a transfer layer portion of such a film.

19. A process for the production of a security element for RF identification, wherein in the process a first conductive layer (29) of an electrically conducting material shaped out in pattern form to form an RF component (12) is applied to a flexible, electrically non-conducting substrate layer (24) in a first surface region of the substrate layer, wherein a first relief structure (27) with grooves for altering electrical properties of the RF component is shaped at least in region-wise manner in the surface region (2) associated with the RF component in the first conductive layer (29), wherein in the first surface region the first electrically conductive layer (29) is shaped out in the form of an RF antenna or a coil, wherein in the region of the conductive layer (29) which is associated with the RF antenna (12) or the coil the grooves of the first relief structure (27, 28, 60) are oriented on average more longitudinally relative to the direction of flow of the electric current, and wherein the first relief structure (27, 28, 60) has a profile depth in the range of 50 nm to 10 µm and a spatial frequency in the range of 100 to 2000 lines per mm, wherein the grooves of the first relief structure (27, 28, 60) are provided in the surface of the first electrically conducting layer (29), which faces the substrate layer (11, 24), and also in the surface of the first electrically conducting layer (29), which faces away from the substrate layer (11, 24).

20. A process according to claim 19 characterised in that the first conductive layer (29) is applied to the substrate layer over the full surface area, for example by vapour deposition, and then partially demetallised in pattern form to form the RF component (12).

21. A process according to claim 19 or claim 20 characterised in that two or more capacitive partial elements connected with connecting tracks are shaped out in the first conductive layer and that connecting tracks to capacitive partial elements are later severed for fine tuning of the resonance frequency.

(56) RU 2193975 C2, 10.12.2002

RU 2176092 C1, 20.11.2001

RU 2074097 C1, 27.02.1997

WO 9721184 A, 12.06.1997

WO 03034332 A, 24.04.2003

FR 2827842 A, 31.01.2003

Your reference: P/45106RUW/NZ/hs
Our reference: 2412-135440RU/8202
Application No.: 2006105654
Attorney Name: Yury D.Kuznetsov

Decision on Grant

Page 5 of 6

Description in the amended Applicant's version according to the supplementary materials of 26.12.2007 with the amended sheets 18, 24 will be used in publishing information about grant of a patent.

Original drawings will be used in publishing information about grant of the patent.

Appendix: Abstract corrected by the Examiner on 1 sheet.

Chief Assistant of the Department
of Electrical and Radio Engineering

Grachev V.I.

Your reference: P/45106RUW/NZ/hs
Our reference: 2412-135440RU/8202
Application No.: 2006105654
Attorney Name: Yury D.Kuznetsov

Decision on Grant

Page 6 of 6

By application # 2006105654/09

(54) SECURITY ELEMENT FOR RADIO FREQUENCY IDENTIFICATION

Abstract

(57)

The invention relates to a field of electrical engineering, in particular, to a security element, for radio frequency identification, as well as to a method for producing said security element. The security element comprises a flexible, electrically non-conductive substrate layer and a conductive layer applied on the substrate layer, said conductive layer being made of an electrically conductive material and shaped, in a first surface area of the substrate layer according to a pattern, to form a radio frequency component. In the surface area which is associated with the RF component, a first relief structure is formed with grooves oriented on average more longitudinally relative to the direction of flow of the electric current. The relief structure has a profile depth in the range of 50 nm to 10 μ m and a spatial frequency in the range of 100 to 2000 lines per mm, wherein the grooves of the first relief structure are provided in the surface of the first electrically conducting layer, which faces the substrate layer, and also in the surface of the first electrically conducting layer, which faces away from the substrate layer. The technical result consists in improving electrical properties of the RF component and creating an optical security feature.

2 independent claims and 19 dependent claims, 21 figures



**ФЕДЕРАЛЬНАЯ СЛУЖБА ПО ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ, ПАТЕНТАМ И
ТОВАРНЫМ ЗНАКАМ**
ФЕДЕРАЛЬНЫЙ ИНСТИТУТ ПРОМЫШЛЕННОЙ СОБСТВЕННОСТИ (ФИПС)
123995, ГСП-5, МОСКВА-Г-59,
БЕРЕЖКОВСКАЯ НАБ., Д.30, К.1

Заведующему отделом: ЭЛЕКТРОРАДИОТЕХНИКИ
г-ну(г-же) СКУЛАКОВУ П.Н.

Дата: 11 марта 2008 г
Наш номер: 2412-135440RU/8202

Кас. заявки РФ 2006105654/09

Уважаемые господа,

При рассмотрении нами решения о выдаче патента на изобретение от 24 января 2008 года касательно заявки № 2006105654/09(006112) были обнаружены следующие ошибки:

1) На 3-ей странице в 3-ей строке пропущен признак “первой” перед признаками “рельефной структуры”.

2) На 3-ей странице в последней строке ошибочно напечатано “расположена ближе”, хотя должно быть напечатано “обращена”.

3) На 4-ой странице во второй строке ошибочно напечатано “находится дальше”, хотя должно быть напечатано “обращена противоположно”.

4) На 6-ой странице в последней строке допущена очевидная опечатка, заключающаяся в том, что вместо “поверхности” ошибочно напечатано “поверхностности”.

Просим Вас внести соответствующие исправления в решение о выдаче патента по вышеуказанной заявке в соответствии с формулой изобретения, представленной в ответ на запрос, а также исправить очевидную опечатку, и с наименьшей возможной задержкой направить исправленные страницы решения о выдаче нам.

С уважением,

КУЗНЕЦОВ Ю.Д.
Патентный поверенный, рег. № 595

